LISTING AND AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (original) A method for simulating film grain comprising the steps of:

receiving image information representative of an image from which film grain has been at least attenuated;

receiving film grain information that includes at least one parameter among a set of possible parameters specifying different attributes of the film grain previously in the image;

selecting a model for simulating grain;

simulating the film grain in accordance with the selected model and the at least one parameter; and

merging the simulated film grain into the image.

2. (Previously presented) The method according to claim 1 wherein the set of parameters includes a plurality of correlation parameters and a plurality of intensity-independent parameters.

3. (original) The method according to claim 2 wherein at least one correlation parameter defines a spatial correlation in a perceived pattern of film grain.

4. (original) The method according to claim 2 wherein at least one correlation parameter defines a correlation between color layers.

5. (original) The method according to claim 2 wherein at least one correlation parameter defines a temporal correlation resulting from previous processing the image sequence.

6. (original) The method according to claim 2 wherein at least one intensity-independent parameters defines an aspect ratio of the film grain.

7. (original) The method according to claim 1 wherein at least one parameter defines intensity of a random component of the film grain.

8. (original) The method according to claim 2 wherein at least one of the intensity-independent parameters defines a color space and blending mode operation used to merge the simulated film grain with the image.

9. (previously presented) The method according to claim 1 wherein a message containing the film grain information is transmitted out-of band with the image representative information.

10. (previously presented) The method according to claim 1 wherein a message containing the film grain information is transmitted in band with the image representative information.

11. (original) The method in accordance with claim 2 where the set of parameters are computed in accordance with a second order auto regression representation of the spatial correlation and a first order regression representation of the cross-color and temporal correlations.

12. (original) The method according to claim 3 wherein the at least one parameter describing the spatial pattern of the grain is established in accordance with a spatial convolution model.

13. (original) The method according to claim 3 wherein the at least one parameter describing the spatial pattern of the grain is obtained from cut frequencies of a filter in the Fourier domain.

14. (original) The method according to claim 1 wherein the set of selecting the model further comprises the step of selecting an additive grain model.

15. (original) The method according to claim 1 wherein the set of selecting the model further comprises the step of selecting a multiplicative grain model.

16. (original) The method according to claim 1 wherein the step of selecting the model further comprises the step of selecting a model that simulates the film grain by convolving a set of random numbers by a linear, time-invariant, digital-filter h defined in the form of:

$$h = (h_0, h_1, h_2, h_3, \ldots h_n)$$

wherein the set of parameters includes filter coefficients.

17. (original) The method according to claim 1 wherein the step of selecting the model further comprises the step of multiplying in the frequency domain by a Fourier Transform of an impulse response H and a Fourier Transform set of random numbers to yield a simulated grain result Y(u) in accordance with the relationship

$$Y(u) = X(u) \cdot H(u)$$

18. (original) Apparatus for simulating film grain, comprising :

first means for: (1) receiving image information representing an image from which film grain has been substantially attenuated; (2) receiving film grain information that includes at least one parameter among a set of possible parameters specifying different attributes of the film grain; (3) selecting a model for simulating grain; and (4) simulating the film grain in accordance with the selected model and the at least one parameter; and

second means for merging the simulated film grain with the image .

19. (original) The apparatus according to claim 18 wherein the model selected by the first means comprises an additive grain model.

20. (original) The apparatus according to claim 18 wherein the model selected by the first means comprises a multiplicative grain model.

21. (original) The apparatus according to claim 18 wherein the model selected by the first means simulates the film grain by convolving a set of random numbers x by a linear, time-invariant, digital-filter h defined in the form of:

$$h = (h_0, h_1, h_2, h_3, \ldots h_n)$$

wherein the set of parameters includes filter coefficients.

22. (original) The apparatus according to claim 18 wherein the model selected by the first means simulates film grain by multiplying in the frequency domain by a Fourier Transform of an impulse response H and a Fourier Transform set of random numbers to yield a simulated grain result Y(u) in accordance with the relationship:

23. (Previously presented) A method for simulating film grain comprising the steps of: receiving image information representative of an image;

receiving film grain information that includes at least one parameter specifying at least one film grain attribute; and

simulating the film grain in accordance with the at least one parameter.

Cancel claim 24.

25. (Previously presented) The method according to claim 1 wherein the step of receiving film grain information includes the step of receiving a plurality of parameters each indicative of a film grain attribute.

26. (Currently amended) An ~~method~~ for communicating image information and film grain information by ~~comprising the step of~~ transmitting the film grain information out-of band with respect to the image representative information.

27. (Currently amended) An ~~method~~ encoder for communicating image information and film grain information by ~~comprising the step of~~ transmitting the film grain information in-band with respect to the image representative information.